

## CLAIMS

1. A device for storing vehicles, which device comprises a plurality of storage locations for said vehicles lying beside and above each other, at least one exchange location connecting to the surroundings of the device, wherein all the aforesaid locations comprise an open supporting platform for supporting a vehicle, means of transport for transporting a vehicle between said at least one exchange location and a storage location, said means of transport comprising a horizontally movable guide system for guiding a lift in vertical direction, which lift comprises a lift platform which can move in horizontal direction between said lift and said locations and which can pass an open supporting platform in vertical direction for transferring a vehicle between the supporting platform in question and the lift platform, said at least one exchange location further comprising a fill-up platform which, in a closed position thereof, in which it is aligned with the open supporting platform of the exchange location, forms a substantially closed surface, characterized in that the fill-up platform can be moved in downward direction from the closed position in order to create space for the lift platform to pass the supporting platform of said at least one exchange location in vertical direction.
2. A device according to claim 1, characterized in that the fill-up platform can be tilted in downward direction.
3. A device according to claim 1 or 2, characterized in that the fill-up platform consists of two parts, which can each be tilted in downward direction about a tilting axis that extends parallel to the horizontal direction of movement of the lift platform.
4. A device according to claim 3, characterized in that the two tilting axes of the two parts are disposed on two opposed longitudinal sides of the closed surface.
5. A device according to any one of the preceding claims,

characterized in that the supporting platform of the exchange location is stationary.

6. A device according to any one of the preceding claims, characterized in that the lift comprises a counterweight, which is movable in the direction opposed to the horizontal direction of movement of the lift platform.

7. A device according to claim 6, characterized in that control means are provided for controlling the movement of the counterweight in dependence on the weight of a vehicle supported by the lift platform.

8. A device according to any one of the preceding claims, characterized in that the lift comprises a frame portion which is horizontally movable with respect to a fixed frame portion of the lift, along which movable frame portion the lift platform is movable in horizontal direction.

9. A device according to any one of the claims 5 - 8, characterized in that the lift is provided with an elongated, flexible tensioning element which is passed over a driving element being rotated by an electric motor for moving the counterweight, the movable frame portion or the lift platform, wherein either the electric motor or the tensioning element is connected to the counterweight, the movable frame portion or the lift platform.

10. A device according to any one of the preceding claims, characterized in that the guide system comprises four vertical legs disposed near the corners of the lift, which legs are interconnected at their lower sides and at their upper sides, wherein each leg comprises at least three interconnected, parallel leg beams.

11. A device according to claim 10, characterized in that a further counterweight is movable between the leg beams of a leg so as to enable vertical movement of the lift along the vertical guide.

12. A device according to claim 10 or 11, characterized in that

a wheel is present under each of the leg beams of a leg for moving the guide system in horizontal direction.

13. A device according to claim 12, characterized in that each leg is fitted with an electric motor for driving at least one wheel of said leg.

14. A device according to claim 13, characterized in that each leg is fitted with an electric motor for each wheel thereof for driving all the wheels of the leg.

15. A device according to any one of the claims 10 - 14, characterized in that the legs of the guide system comprise no more and no fewer than three leg beams.

16. A device according to any one of the claims 10 - 15, characterized in that said wheels comprise rubber tyres.

17. A device according to any one of the preceding claims, characterized in that a screening body is present under open supporting platforms, the upper surface of which screening body is preferably slightly inclined so as to effect the discharge of liquids, such as oil, from a vehicle supported by the supporting platform in question to a discharge system.

18. A device according to claim 17, characterized in that a discharge gutter, which extends transversely to the direction of inclination of the upper surface, and which is connected to the discharge system, is provided at one end of said upper surface.